

Methodology and Practice of Teaching of Philological Cycle Subjects at the Technical Faculties of Russian Universities

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Abstract—The relevance of the research is reasoned by the fact that for professional self-realization of graduates of technical qualifications of university training, a high-level knowledge of modern Russian literary language, as well as a business style of communication, both in oral and in written form, becomes an urgent need. The methodology highlighted an aspect that implies the need to ensure conditions for the interrelation of logical and figurative thinking in order to enrich the logical chain of reasoning through interactive learning activities. To improve the effectiveness of interdisciplinary relations, the introduction of an integrated discipline “Engineering Philology” is proposed. The purpose of its components is described, the role of the subject “literature” in the cycle of philological disciplines is considered in detail, the features of teaching humanities as non-core subjects are highlighted. On the basis of theoretical research and personal experience of teaching the discipline of “Russian language and the basics of creative writing” the authors gave recommendations in order to enhance the role of this discipline in the formation of professional competencies of bachelors of technical directions. The experiment showed the relation between the development of the main educational program and the success of studying the discipline of “Russian language and the basics of creative writing”. It is concluded that engineering philology is aimed at the formation of those competencies that are not included in special disciplines and which are necessary for the future specialist as a professional and as a representative of technical elite.

Keywords—*philological cycle subjects; higher technical education; interdisciplinary interconnections*

I. INTRODUCTION

In the past two decades, a steady growth of interest in technical training appeared in Russia. However, humanitarian knowledge, voluntarily or involuntarily, is pushed to the periphery, and any bias, as it is known, can have the most unexpected consequences. One of them is the technocratism of national higher engineering school, which, in particular, finds expression in extremely low assessment of the role of humanities in the formation of the competencies of a future technical specialist. The well-known proposition that the prevalence of utilitarian knowledge inevitably leads to a weakening of creative thinking and the associated creative potential of an individual is not taken into account. As a result, there is a decrease in cognitive activity of students and indifference to the results of their studies, which ultimately affects the quality of preparation of a university graduate. Of course, this is not the only reason, but it is of a basic nature, which means that we cannot fundamentally change the motivation of students to study if we do not change the ratio of utilitarian and humanitarian knowledge in learning process.

Earlier [1], referring to global experience, it was noted that professional training at an institution of higher education is inconceivable outside the broad culture of an individual, which is formed primarily by humanitarian disciplines. The methodological substantiation of this judgment is the position that, unlike information, knowledge cannot be “transferred”, it is necessary to “extract” it independently and often creatively. In this regard the role of humanitarian disciplines is very significant, since humanitarian disciplines, to a greater extent than major ones, contribute to the interconnection of creative and logical thinking, the development of the ability to

systemically and creatively perceive information. It is humanitarian knowledge that forms the system of life values, the emotional-volitional sphere, creativity and charisma of an individual, an intellectual, a representative of the elite of society.

The forms of realization of humanitarian component in higher technical education may vary: from a block of disciplines (where one of them can be a systemically important one, depending on the task) to a single discipline of this block. Thus, the experience of teaching such subjects as rhetoric, Russian language, speech culture, the basics of creative writing, national history, history and culture of the native land, foreign languages is known in engineering preparation. It is necessary to note that in the overwhelming majority of cases, the teaching system is very traditional and established. The exception, perhaps, is the Russian language and related subjects, since the concept of teaching Russian language and literature is periodically reviewed. This is partly reasoned by broad discussion of school curriculum on the Russian language and literature, partly by the narrow special tasks put forward not only by the entire system of higher engineering education, but sometimes by a single specific university.

However, in addition to highly specialized tasks, there is always a social order that deals with the problem as a whole, primarily from the point of view of social priorities, when professional training and training of the elite of society must be closely related. As a result, such a question as the development of oral and written speech in the system of higher engineering education will always be relevant. It is obvious that the lack of elementary literacy, the inability to clearly articulate thoughts, the elementary impediment to language, unfortunately, do not contribute to professional activity. Many people, to one degree or another, are confronted with the fact that modern youth cannot speak. Their speech is not distinguished by the richness and diversity of vocabulary, which becomes especially obvious in face-to-face communication.

There is no doubt that computer technology, except creation and progress, also possess destructive power. Immersed in virtual world, young people communicate with each other in the language of social networks, which, as a rule, is far from observing the spelling, punctuation, and other norms of the modern Russian language. So-called youth slang is taken out of the virtual world and introduced into real life. It becomes ubiquitous and, as a result, begins to put serious pressure on the modern literary norm. This process is not innocuous, due to the fact that mother tongue in the formation of a personality and its mentality plays extremely significant role.

It is impossible to say that the urgency of the problem of literary language in modern society is ignored by the higher education system. Thus, the curriculum of universities, regardless of the direction of training, introduced a discipline designed to strengthen the knowledge of the Russian language. However, in reality, the situation is such that students of engineering training, as a rule, have a low level of literacy. In addition, there is often an urgent need for a second school

course of the Russian language, but the university cannot and should not duplicate the school curriculum. In this regard, the issue of organizing the teaching of the Russian language in higher technical school is of particular importance: the purpose of introducing this subject into the curriculum, the substantive content of the discipline, the scope, and the forms of implementation - all these aspects require careful study. The experience of different universities in solving such an urgent problem is not only interesting, but is certainly productive, since only taking into account the developments of each individual university can result in a single concept that meets both narrow professional and general educational purposes.

II. LITERATURE REVIEW

In the modern dynamically developing world, involved in the race of creation and development of new technologies, the main challenge is the modernization of the higher education system [2, 3], focused on the operational introduction and use of modern technologies in educational process and in teaching methods of various disciplines. However, the powerful potential of modern technologies can be realized only due to their targeted use by teachers. At the same time, it is important to shift the motives of educational activity from the final result to its process with the decisive role of the motives of self-education [4]. One of the most important tasks of the modernization of higher engineering education is to achieve a high level of communicative readiness of graduates of an engineering university [5]. In the work [6], it was concluded that transdisciplinarity helps doctoral students to conduct research at the intersection of academic science and their own professional activities, as well as develop projects that are of practical relevance. At the same time, developed language skills are undoubtedly one of the most important aspects.

In some cases, there is too slow adaptation of engineering education system to the changing needs of the labor market and business [7]. One of the problems is reasoned by the discrepancy between the used communication codes of business representatives and graduates of technical universities. Similar studies related to the development of the communicative competence of future specialists in the oil and gas industry using the example of the Tyumen region were carried out in the relevant paper [8]. In another study [9], one of the key pedagogical conditions that determine the formation of speech competence of students of technical training is the creation of a positive speech environment conducive to the formation of competences of social interaction in the course of the subject-to-subject relations of a teacher and a student.

During the work [10], which analyzes the basic principles of the humanistic paradigm in the system of philological education in a medical university it was concluded that "recognition of the absolute value of personalities of a student and a teacher, freedom of choice for a student and teacher in the learning process, the development of students, the democratization of educational process and the development of motivational attitudes of medical students" present the basis for the development of a model of philological education in the system higher medical education.

The main problems of the regional higher education system, as well as the prospects for its development in modern conditions, were analyzed in a number of works, the main trends characteristic of the development of the education system in Russia in the past and present [11, 12] were investigated. In the research literature, it is noted that special attention should be paid to the development of a new humanistic paradigm based on the attitude of a teacher to a student as an independent and responsible person and at the same time participating in the educational process [13].

Separately, it is necessary to mention the work where the key aspects of the development of modern higher engineering education were investigated, including problems related to stimulating the interest of students in obtaining scientific knowledge [14]. A new model of teaching students, based on the Foresight strategy [15], has been proposed with the aim of training competitive specialists with innovative thinking, possessing knowledge not only in the field of basic science, but also in the field of management and business activity.

III. MATERIALS AND METHODS

The materials and methods are determined by the purpose of the research of the place and role of philological disciplines, in particular, the Russian language at technical faculties of universities.

During the course of training sessions with first-year students of the Faculty of Informatics and Computer Engineering of ChSU named after. I.N. Ulyanov they used essay themes and texts for presentations, various forms of written work (mini-essay, five-line syncveyne, advertising texts on topics related to the future profession), as well as test items for spelling and punctuation literacy. In addition, students learned to render research papers, write abstracts, and to perform orally before large audience.

The system approach, which allows considering the whole system of engineering training of students in the form of a single complex of interrelated and interacting elements, is used to analyze the potential of the discipline "Russian language and the basics of creative writing" aimed at the development of skills of creative thinking and the formation of competencies ensuring successful professional activity graduates. The principles of synergistic approach, according to which complex open systems were considered as self-organizing, were applied to the study of the emergence and evolution of favorable trends provided by the teaching of the Russian language and contributing to both professional self-realization and career of graduates of technical faculties.

The analysis and generalization of the research results were carried out, including, the experience of the authors in teaching the discipline of "Russian language and the basics of creative writing" in the context of engineering direction of training. First-year students according to the results of mastering the discipline were ranked by three levels: high, average and low. These results were compared with the results of the examination session.

IV. RESULTS AND DISCUSSIONS

The experience of teaching the discipline of "Russian language and the basics of creative writing" at the Faculty of Informatics and Computer Engineering, where applicants receive high points in mathematics and physics, proves that this discipline needs to be taught but is also necessary in a certain sense. Firstly, it serves as a means of maintaining literacy in both oral and written speech at the proper level for self-realization in educational activities. Secondly, a subject familiar from school, but not so complicated in comparison with mathematics and physics, cannot but contribute to the socialization of a first-year student in a university, giving him some degree of confidence that he is able to successfully adapt to higher education system. Thirdly, and this is perhaps the most important thing: such a component of the discipline as the "creative letter" opens up wide opportunities for the first-year student for creative self-realization.

It is important to emphasize that all tasks were carried out within the framework of studies, which means that a student introduced into work, wishing or not activates his creative thinking. During the class, it is impossible to divide students conditionally into those who write poetry and those who never even thought about it. During practical lesson, each student, having received a task, writes a mini-essay on one of relevant topics ("What is the mission of fiction in the modern world?") or a five-line synquane on a topic related to a future profession ("Internet," "Experience," Creativity ", etc.). It is natural that, the more creative the approach to performing this task, the higher the IQ of a student in their own eyes and from the point of view of their fellow students. Moreover, the assessment of a teacher and the assessment of students in the group, as a rule, coincide.

In addition, while performing practical tasks such as "Compose an advertising text about your faculty," "Explain why do you chose this professional direction?," "How do you imagine a modern scientist?," etc., the freshman rethinks the choice made, perhaps, in a new way assesses their view of a profession and, accordingly, their professional prospects. Of course, the role of the major subjects in this case does not diminish at all, however, our subject made it possible for students to look at their future profession in a new way, from the perspective of a future specialist, and not a graduate of school.

As a result, the discipline "Russian language and the basics of creative writing" can be viewed both as a purely academic, responsible for the skills and abilities of literate and creative writing and oral speech, as well as a subject with an enhanced moral and ethical component, and as one of the means of motivation for learning activities aimed at the formation of a technical profile specialist.

First-year students in accordance with the results of mastering the discipline during the fall semester of the academic year 2017/2018 were ranked by three levels: high, average and low. Out of the 148 students, 25.68% demonstrated a high level of knowledge, the average level amounted 68.24%, and low - 6.08%. At the end of the session, approximately every eighth student with a high level of knowledge received one "unsatisfactory" mark. Among

students with average knowledge, almost every third student received one or more “unsatisfactory” marks. The session was passed in time by 86.84% of students of the “high” level and 72.27% of the “average” level knowledge students. The share of those who passed the session with average points “good” and “excellent” among those referred to the level “high” and “average” knowledge is equal, respectively, 78.95% and 53.46%. As a result, we can conclude that there is an interrelation between the success of studying the discipline “Russian language and the basics of creative writing” and the quality of mastering the main educational program.

Learning activity is an effort to transform both verbal and non-verbal information into knowledge. Educational texts contain, first of all, the realized information, therefore, being guided only by them, it is impossible to create sufficient conditions for interrelation of logical and creative thinking. Objectively inevitable discontinuities in the logical chain of reasoning should be eliminated through an appropriate block of disciplines and interactive learning activities, and the independent work of a student should help consolidate the result.

Knowledge, unlike material objects, cannot be transmitted literally. Every student actually forms their knowledge independently, and therefore, creatively from a subjective point of view. In other words, every person transforms the same educational information into knowledge and applies it in different ways.

Formal logic is not able to express the laws of creativity, since images are the main material of heuristic thinking. It is known that when reading literary texts, the right hemisphere of a brain is more active (creative thinking), and when reading scientific and technical texts, the left (logical) brain hemisphere is more active. As a result, if a student is limited to special disciplines, his creative potential, in fact, remains unclaimed, and personal development will inevitably lag behind the narrow professional. Philological disciplines contribute to the relationship of creative and logical thinking, which lies at the basis of intuition and creativity. Therefore, they contribute to the development of the ability to systematically and simultaneously creative perception of information.

A high level of creative thinking is called artistic perception, art. According to L.N. Tolstoy, “art is a human activity, consisting in the fact that one person transmits to others the feelings he experiences with the help of known external signs, and other people become infected with these feelings and experience them too” [16, p. 80].

Only the author of “War and Peace” could precisely formulate the definition of creative thinking, find a formula that clearly shows that creative thinking is inherent for everyone. However, art, as the highest degree of emotional and creative activity of a person, is still created by the chosen ones, whereas the capacity for creative perception of art is accessible to a wide circle of readers, viewers, and listeners. It is necessary to note that every person has his own level of perception. And the higher this level, the higher the creativity of thinking, which is reflected in all spheres of human activity: from everyday behavior to professional self-realization. As a

result, the conclusion about the need to develop creative thinking in learning process in school-university system, regardless of the direction of training, is needed. In this regard, the cycle of humanities and, above all, philological disciplines as a part of engineering should be regarded as obligatory.

A teacher is required not only to know the material, but also to have the ability to transmit it, taking into account the peculiarities of audience. However logical thinking, being a landmark, perceives objective reality schematically, leaving behind all the fullness of emotions, colors and shades. In whatever correct form, from the point of view of logical sequence, information is presented, it will not turn into knowledge if it is not passed, what is called, through itself, if both verbal perception and nonverbal activity are not connected. A special role in this regard is played by the Russian language and literature. It is no coincidence that these two subjects in educational activities are always combined and philological faculties prepare philologists, specialists and bachelors in the Russian language and literature. Although these are different disciplines, it is assumed that they must act in close relationship, because it is here that we see a classic example of the necessary combination of logical thinking with creative one.

The Russian language as a sign system, as a system of norms and rules, develops and forms logical thinking, while literature activates creative thinking, therefore - the creative abilities of an individual. In addition, both in the Russian language and in literature there is such a concept as means of creative expressiveness, which are specifically designed to strengthen creative perception, and therefore, a priori cannot but influence the development of creative thinking. As a result, it is necessary to draw the conclusion that the Russian language and literature at technical faculties should be taught as a single discipline, consisting of two compulsory sections. Only in this case it is possible to speak with a high degree of probability about the role of philological disciplines in the formation of general culture of a personality, intelligence and creativity.

In the framework of the discipline “Russian language and the basics of creative writing”, such a form of work as an essay plays an important role. At first glance, this is a purely philological practice. Meanwhile, it is an essay that allows solving complex problems. It develops and consolidates the skills of speaking and writing, it activates the process of logical and creative thinking, first of all, creative thought, opens up opportunities for free discussion and developing a point of view on a given topic and, of course, improves literacy.

In addition, an essay, especially home task essay, teaches the culture of dealing with sources. The practical experience of teaching the discipline “Russian language and the basics of creative writing” shows that working with sources is the most difficult task for former schoolchildren, whose consciousness, speech, and, therefore, individuality are limited to the Internet and social networks. It is very difficult to overcome this “frame” thinking and its reflection in speech, in this sense, the traditional work in its varieties (class or homemade, large or mini, on a literary or free topic, advertising, professional, etc.)

remains the most successful and effective form of work. Thus, every discipline of philological cycle (Russian language, culture of speech, creative writing, and rhetoric) has its own, quite justified semantic load. The weighted combination of these disciplines within the philological block is quite appropriate and necessary to achieve the desired result.

Literature deserves a special focus, which can hardly be studied as an independent subject in technical faculties, but it should be represented in the block of philological disciplines. The reasons for this are as follows. Firstly, literature is one of the most effective means of activating creative thinking, which is indispensable for the development of creative thought of a future engineer. Secondly, literature is a source and often an example of behavioral models in society, which has an unconditional educational value and contributes to the socialization of an individual. Thirdly, the language of literature is a standard of literary language, and without reference to samples it is impossible to form the skills of competent oral and written speech. And finally, the last: Russian classical literature has always been and remains a means of moral education of an individual, a source of moral and ethical values and it is reflected in such a trait of future specialist, as his intelligence. In general, literature can make a significant contribution to the education of students, and later in their professional activities - a steady need to show that level of culture, civic traits, moral standards, which corresponds to the ideas of national elite that have developed in Russian society.

It is necessary to note the features of the humanities and their study as a non-major, which cannot be ignored in teaching process. Firstly, a certain "blurred lines" of concepts and a polysemy of relations between them. Secondly, it is necessary to note the variability of perception and conclusions. Thirdly, due to the first two reasons, the difficulty of self-control and external examination of knowledge, in particular, with the help of tests. And, finally, the brightest feature is the so-called "redundancy" of text. As a result, educational material on the humanities often seems blurred, vague, but these traits are deceptive. For a student its presence actually means that he does not have the ability to choose the most important thing, to perceive artistic information, that is, the lack of the skills that are formed through creative thinking. Thus, often at the first acquaintance with the material, the students have an illusion of complete understanding and, accordingly, ease of reproduction of educational text. However, this illusion disappears instantly when they try to independently state or reproduce the same educational text.

The ways to overcome difficulties in this regard may be different:

- the material of the above-mentioned integrated disciplines should be studied simultaneously and in close relation with the main direction for example, in literature - these are literary works in which, one way or another, the subject of the future profession is reflected; in the Russian language, the text for the development of literacy rates can also be of a different professional orientation;

- the adaptation of educational material to a rational style of thinking of students of technical faculties by increasing its

visibility, brevity and consistency, the active use of test forms of training, the monitoring and self-control of knowledge using information technologies;

- the focus on interactive forms of training (computer training, means of illustration and demonstration, presentation and mini-essays, oral essay on a given topic);

- individual or group educational research and creative work, taking into account the professional interests of students.

V. CONCLUSIONS

Pedagogical science recommends presenting educational material, firstly, systematically, and secondly, in conjunction with related disciplines. The block of philological disciplines at technical faculties should be considered as an independent unit of the curriculum and implemented at initial courses with the provisional name "Engineering Philology". In this block the Russian language should be systemically important, but in an obligatory combination with Russian classical literature, as well as with the culture of speech or rhetoric. Only in close relation, as it was in the 18th century, M.V. Lomonosov brilliantly demonstrated, philological disciplines, and, above all, the Russian language and literature, can become not only a necessary condition for the formation of a engineering specialist, but also an impetus for the development of creative thought.

In any case, for M.V. Lomonosov, poetry often became a kind of expression of his own scientific hypothesis, an experience of scientific truth that illuminated him, when an artistic image and dry theory allowed him to create an objective picture of the world in a lyrical work with poetry. It is no coincidence that the so-called scientific poetry has constituted a notable section in the work of the brilliant Russian scientist and poet.

According to our own experience of teaching the discipline "Russian language and the basics of creative writing" in technical directions of training, it is possible to justify the need for this discipline by the fact that its teaching is aimed at maintaining literacy and improving oral and written skills of students. However, attention is drawn to the fact that the students themselves are interested in philological disciplines, because they understand that their competitiveness after graduation depends largely on their knowledge, along with professional competencies, language and speech literacy rates, as well as on creativity of approaches and breadth of minds.

This belief is formed in the process of daily educational practice, since the implementation of individual tasks almost immediately begins to work for final outcome. The creation of a creative advertising text dedicated to specific profession, and own resume, annotations, reviewing and referencing, the basics of business communication and oratorical techniques - all these methods are aimed at the success of training not only on humanitarian, but, above all, on professional academic curriculum.

Thus, according to the authors taking into account historical experience and modern, ever-increasing

requirements, the introduction of the block called “Engineering Philology” in the curriculum of technical professional directions should become an integral part of higher technical and engineering education. This recommendation is more relevant if we set the task of the preparation of future technical elite capable of taking responsibility for the progressive and at the same time positive development of production, society and the country as a whole. Based on the ideas of interdisciplinarity, an integrated block of philological disciplines called “Engineering Philology” is designed to ensure the formation of those competencies that are out of the field of special subjects and which are necessary for a future specialist with a higher technical education as a professional and as a representative of technical elite in modern society.

In conclusion, it is necessary to note that modern scientific research in educational sphere have different directions. One of them, along with an interdisciplinary approach, is transdisciplinarity. Thus, showing the need for students to develop independent analysis of multifaceted information, develop the ability to link formal and informal actions, avoid uncertainty and participate in joint activities, in general, the effectiveness of transdisciplinary integration is emphasized [2, 17, 18]. If interdisciplinarity implies a simple “borrowing” of techniques and methods from other areas of science, then transdisciplinarity implies a “functional synthesis of methodologies”, which allows solving complex problems at the junction of heterogeneous disciplines.

Further development of the considered issues may be presented by the development of methods for the productive teaching of philological disciplines at technical faculties of universities. These methods should be aimed at the development of autonomy and creativity of students, and on the use of learning technologies that provide a controlled transition from reproduction to search activity.

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